IN THE SPECIFICATION:

Please amend the specification as follows:

Please substitute the paragraph beginning at page 1, line 7, with the following.

--The present invention relates to a sample processing apparatus and method and device manufacturing method and, more particularly, to a sample processing apparatus and method and device manufacturing method, which process a sample such as a wafer in a predetermined atmosphere such as a reduced-pressure atmosphere of a specific gas and are suitable for an X-ray exposure apparatus, an F2 exposure apparatus, a CVD apparatus, and the like.--

Please substitute the paragraph beginning at page 8, line 22, and ending on page 9, line 10, with the following.

--According to still another aspect, ~~of~~ the present invention is related to a method of manufacturing a device, comprising the steps of transferring a substrate coated with a photosensitive agent to a load-lock chamber by a transfer mechanism installed in a clean booth in which a clean gas flows, adjusting a pressure in the load-lock chamber and transferring the substrate from the load-lock chamber into a process chamber, transferring a pattern onto the substrate by an exposure apparatus installed in the process chamber, transferring the substrate from the process chamber to the load-lock chamber, adjusting the pressure in the load-lock chamber, extracting the substrate from the load-lock chamber, and transferring the substrate by the transfer mechanism installed in the clean booth in which the clean gas flows.--

Please substitute the paragraph beginning at page 9, line 11, with the following.

--The preferred embodiment of the present invention solves a problem that if the transfer mechanism for transferring the substrate to be processed from the coater/developer for executing ~~preprocess~~ pre-process and post-process of the substrate to be processed to the load-lock chamber is exposed to air in the clean room, the cleanliness in the entire clean room must be increased to maintain the cleanliness of the atmosphere in the process chamber and load-lock chamber, resulting in an increase in cost. According to the preferred embodiment of the present invention, the entire transfer path by the transfer mechanism is arranged in the clean booth, and a laminar flow of a clean gas is formed in the clean booth, thereby preventing dust from sticking to the substrate to be processed.--

Please substitute the paragraph beginning at page 11, line 24, with the following.

--Fig. 7 is a schematic view showing a prior art arrangement.--

Please substitute the paragraph beginning at page 12, line 2, with the following.

--Fig. 1 is a view showing a processing apparatus according to the first embodiment of the present invention. This processing apparatus is a semiconductor manufacturing apparatus including an X-ray exposure apparatus of a so-called ~~inline~~ in-line system, which has an exposure system using SR light, i.e., soft X-rays as exposure light and continuously processes wafers as substances to be processed. The apparatus has an SR light source 1 for generating SR light, a beam line 2, and a hermetic process chamber 3.--

Please substitute the paragraph beginning at page 12, line 12, and ending on page 13, line 2, with the following.

--The beam line 2 has an ultra-high vacuum atmosphere and is connected to the SR light source 1 through a gate valve 2a. The SR light from the SR light source 1 is guided to the process chamber 3 through the beam line 2. A mask M with a transfer pattern formed on a thin membrane and a wafer W are placed in the process chamber 3. The mask M and the wafer W are placed on alignment stages (not shown), respectively. At the time of exposure in which the pattern formed on the mask M is transferred onto the wafer W, a reduced-pressure helium atmosphere at a reduced pressure of, e.g., 150 Torr is set in the process chamber 3 to suppress any attenuation of the SR light as an exposure light. The process chamber 3 has an X-ray window 4, which is generally made of beryllium. The X-ray window 4 serves as a partition for separating the helium atmosphere in the process chamber 3 from the ultra-high vacuum atmosphere in the beam line 2.--

Please substitute the paragraph beginning at page 14, line 24, and ending on page 15, line 14, with the following.

--A straightening plate 18 is arranged under the entire upper surface of the load-lock chamber 5. A supply pipe 19 that opens to the upper side of the straightening plate 18 has one end connected to the load-lock chamber 5 and the other side connected to the process chamber 3 and clean booth 14 through a supply switching valve 20 serving as a selection mechanism or gas control mechanism, thereby constructing a load-lock chamber gas fluidizing

mechanism. By the supply switching valve 20, one of three states can be selected: ~~1)~~ (1) a state wherein no gas is supplied into the load-lock chamber 5, ~~2)~~ (2) a state wherein helium is supplied into the load-lock chamber 5 through the supply pipe 19 (state wherein the valve is opened to the "process chamber 3 side"), or ~~3)~~ (3) a state wherein air is supplied into the load-lock chamber 5 through the supply pipe 19 (state wherein the valve is opened to the "clean booth 14 side").--

Please substitute the paragraph beginning at page 15, line 15, and ending on page 16, line 3, with the following.

--One end of an exhaust pipe 21 is connected to the load-lock chamber 5, and the other end is connected to an exhaust unit 23, helium circulation unit 12, and air circulation unit 16 through an exhaust switching valve 22. By the exhaust switching valve 22, one of three states can be selected: ~~1)~~ (1) a state wherein the gas is exhausted from the load-lock chamber 5 through the exhaust pipe 21 by the exhaust mechanism 23 ("exhaust"), ~~2)~~ (2) air is circulated through the load-lock chamber 5 ("air circulation"), or ~~3)~~ (3) a state wherein helium is circulated through the load-lock chamber 5 ("helium circulation"). The straightening plate 18 is formed from, e.g., a punching metal with a number of perforations formed in a metal plate so as to form, the load-lock chamber 5, a uniform flow (laminar flow) of a gas supplied through the supply pipe 19.--

Please substitute the paragraph beginning at page 17, line 5, with the following.

--(STEP 3) The supply switching valve 20 is switched to the process chamber 3 side. At this time, a decrease in pressure in the process chamber 3 can be compensated for with helium by the helium supply mechanism (not shown), as needed. In this state, a laminar flow of helium is formed in the load-lock chamber 5, as in the process chamber 3 (Fig. 2A).--

Please substitute the paragraph beginning at page 19, line 10, with the following.

--A supply pipe 19 has one end connected to the load-lock chamber 5 and the other end connected to a process chamber 3 and dry nitrogen supply source 61 through a supply switching valve 50. By the supply switching valve 50, one of three states can be selected: ~~1)~~ (1) a stage wherein no gas is supplied into the load-lock chamber, ~~2)~~ (2) a state wherein helium is supplied into the load-lock chamber 5 through the supply pipe 19 (state wherein the valve is opened to the "process chamber side"), or ~~3)~~ (3) a state wherein dry nitrogen is supplied into the load-lock chamber 5 through the supply pipe 19 (state wherein the valve is opened to the "nitrogen side"). In addition, by a flow rate adjusting valve 62, the flow rate of nitrogen can be adjusted such that a predetermined pressure is set in the load-lock chamber 5.--

Please substitute the paragraph beginning at page 19, line 26, and ending on page 20, line 8, with the following.

--One end of an exhaust pipe 51 is connected to the load-lock chamber 5, and the other end is connected to an exhaust mechanism 53 and helium circulation unit 12 through an

exhaust switching valve 52. By the exhaust switching valve 52, one of two states can be selected: ~~1)~~ (1) a state wherein the gas is exhausted from the load-lock chamber 5 through the exhaust pipe 51 by the exhaust mechanism 53 ("exhaust"), or ~~2)~~ (2) a state wherein helium is circulated through the load-lock chamber 5 ("helium circulation").--

Please substitute the paragraph beginning at page 21, line 6, with the following.

--(STEP 3) The supply switching valve 50 is switched to the process chamber side. At this time, a decrease in pressure in the process chamber 3 can be compensated for with helium by the helium supply mechanism (not shown), as needed. In this state, a laminar flow of helium is formed in the load-lock chamber 5, as in the process chamber 3.--

Please substitute the paragraph beginning at page 24, line 26, and ending on page 25, line 20, with the following.

--An embodiment of a device manufacturing method will be described next. Fig. 5 shows the flow of manufacturing a semiconductor device (e.g., a semiconductor chip such as an IC or an LSI, a liquid crystal panel, or a CCD). In step 1 (circuit design), the pattern of a semiconductor device is designed. In step 2 (mask preparation), a mask (reticle) as a master having the designed pattern is prepared. In step 3 (wafer manufacture), a wafer as a substrate is manufactured using a material such as silicon. In step 4 (wafer process) called a ~~preprocess~~ pre-process, an actual circuit is formed on the wafer by lithography using the prepared mask and wafer. In step 5 (assembly) called a post-process, a semiconductor chip is formed from the wafer

prepared in step 4. This step includes processes such as assembly (dicing and bonding) and packaging (chip encapsulation). In step 6 (inspection), inspections including <u>an</u> operation check test and <u>a</u> durability test of the semiconductor device manufactured in step 5 are performed. A semiconductor device is completed with these processes and shipped (step 7).--

Please substitute the paragraph beginning at page 25, line 21, and ending on page 26, line 14, with the following.

--Fig. 6 is a flow chart showing the detailed flow of the wafer process. In step 11 (oxidation), the surface of the wafer is oxidized. In step 12 (CVD), an insulating film is formed on the wafer surface. In step 13 (electrode formation), an electrode is formed on the wafer by deposition. In step 14 (ion implantation), ions are implanted into the wafer. In step 15 (resist process), a photosensitive agent is applied to the wafer. In step 16 (exposure), the circuit pattern of the mask is printed on the wafer by exposure using the above X-ray exposure apparatus. In step 17 (development), the exposed wafer is developed. In step 18 (etching), portions other than the developed resist image are etched. In step 19 (resist removal), any unnecessary resist remaining after etching is removed. By repeating these steps, a multilayered structure of circuit patterns is formed on the wafer. When the manufacturing method of this embodiment is used, a semiconductor device with <u>a</u> high degree of integration, which is conventionally difficult to manufacture, can be manufactured.--

Please substitute the paragraph beginning at page 26, line 25, and ending on page 27, line 1, with the following.

--Use of a semiconductor manufacturing apparatus for processing a wafer by a processing apparatus in a predetermined atmosphere can contribute to cost reduction of a semiconductor device and the like.--